PROJECT NUMBER: 6505
PROJECT TITLE: Special Investigations/Methods Development
PROJECT LEADER: D. F. Ingraham
PERIOD COVERED: November, 1988

I. PROJECT ART

A. **Objective**: Provide analytical support to project ART.

B. **Results**:

Some changes have been implemented in an attempt to increase the precision and accuracy of the GC method for the analysis of feed and extracted tobaccos. These have included the use of more standards in the expected range of nicotine concentrations and more extensive use of monitor samples. The analysis of the monitor samples will be used to compute the precision and reproducibility of the method. These data will also be used to isolate the GC precision from the precision of the overall method.

Development of an HPLC method for the determination of nicotine continues. The purpose of this method is to serve as an independent method which can be used as a referee for the GC method. Three different extraction systems have been tried and all three are acceptable for feed tobacco, but result in unacceptable interferences for extracted tobacco. Several solid phase extraction schemes were tried to clean up the sample with no success.

C. **Plans**: Continue analytical support on an as needed basis. Continue to try different clean-up procedures for the HPLC method. After a sufficient number of samples have been run, subject the monitor data to statistical analysis to determine the precision of the GC method.

II. ANALYSIS OF RESIDUAL SOLVENTS IN PACKAGING MATERIAL

A. **Objective**: To provide headspace analyses for residual solvents from packaging materials and develop a QA method for the routine analysis of packaging materials.

B. **Results**: QA continues to analyze routine packaging material for residual solvents while Project 6505 is analyzing samples from new products and other non-routine requests such as inks. Training is being provided to some of the suppliers of packaging materials in the setup and execution of the headspace/GC method.

C. **Plans**: We will continue to analyze non-routine samples and provide support to QA as needed.

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III. MATERIALS EVALUATION

A. **Objective**: To identify components of commercial products prior to their use at PM facilities.

B. **Results**: Samples analyzed this month included belting material, static free bags for computer parts, several cleaners, spray-on insulation, sealants, lubricants, and pack overwraps. Four presentations were made to PM staff in Louisville.

C. **Plans**: Materials evaluation is a continuing program.

IV. RESPONSE TO ANALYTICAL REQUESTS

A. **Objective**: To provide analytical support to R&D and Operations personnel and projects.

B. **Results**:

Analyses and investigations by project personnel during the month of November included:

Several customer complaint samples were analyzed for possible contaminants.

Ten smoke condensate samples were quantitatively analyzed for catechol.

The amount of decanoic acid was determined on several samples of RL. These were pilot plant samples to which decanoic acid had been added at three different levels.

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